

WHAT IS CLAIMED IS:

1. A disc apparatus for recording encoded video data on a disc, comprising:

determining means for determining, for each frame of the video data, whether the first field of the frame is a top field, whether the frame includes a repeat field, and whether the frame is a dummy frame;

generating means for generating a table based on the determination result from the determining means, the table including pieces of identification information of each frame: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame; and

recording means for recording the generated table on the disc.

2. A disc apparatus according to Claim 1, wherein the determining means also determines the type of encoding of the frame, and

the generating means describes identification information indicating the type of encoding of the frame in the table.

3. A disc apparatus according to Claim 2,
wherein the unit of the encoding is a long Group Of
Pictures,

the identification information indicating whether the
first field of the frame is a top field is top_field_first,

the identification information indicating whether the
frame includes a repeat field is repeat_first_field, and

the type of encoding of the frame includes I picture, P
picture, and B picture.

4. A disc apparatus according to Claim 1, wherein the
generating means describes an address indicating the
position on the disc of the frame in the table.

5. A disc apparatus according to Claim 1, wherein the
generating means allocates a uniform size of entry of the
table to each frame, and describes the identification
information of each frame in the entries of the table
according to a display order.

6. A disc apparatus according to Claim 1,
wherein the generating means generates the table for
each unit of recording including sequential pieces of the
video data, and

when part of the video data is deleted, the generating means deletes part of the table corresponding to the deleted part of the video data.

7. A disc apparatus according to Claim 6,
wherein the generating means also generates an offset value indicating a position from the top of the table, and
the recording means records the offset value on the disc.

8. A disc recording method for recording encoded video data on a disc, comprising:

a determining step of determining, for each frame of the video data, whether the first field of the frame is a top field, whether the frame includes a repeat field, and whether the frame is a dummy frame;

a generating step of generating a table based on the determination result obtained in the determining step, the table including pieces of identification information of each frame: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame; and

a recording step of recording the generated table on

the disc.

9. A recording medium containing a computer-readable program for recording encoded video data on a disc, the program comprising:

a determining step of determining, for each frame of the video data, whether the first field of the frame is a top field, whether the frame includes a repeat field, and whether the frame is a dummy frame;

a generating step of generating a table based on the determination result obtained in the determining step, the table including pieces of identification information of each frame: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame; and

a recording step of recording the generated table on the disc.

10. A program for recording encoded video data on a disc, the program allowing a computer to execute:

a determining step of determining, for each frame of the video data, whether the first field of the frame is a top field, whether the frame includes a repeat field, and

whether the frame is a dummy frame;

a generating step of generating a table based on the determination result obtained in the determining step, the table including pieces of identification information of each frame: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame; and

a recording step of recording the generated table on the disc.

11. A disc apparatus for playing back encoded video data recorded on a disc, comprising:

playback means for playing back the video data and a table from the disc, the table including pieces of identification information of each frame of the video data: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame;

frame generating means for generating a frame to be displayed based on the identification information in the played back table; and

output means for decoding video data of the generated frame and outputting the video data.

12. A disc apparatus according to Claim 11, wherein identification information indicating the type of encoding of the frame is described in the table.

13. A disc apparatus according to Claim 12, wherein the unit of the encoding is a long Group Of Pictures,

the identification information indicating whether the first field of the frame is a top field is top_field_first,

the identification information indicating whether the frame includes a repeat field is repeat_first_field, and

the identification information indicating the type of encoding of the frame is a signal for identifying the frame as I picture, P picture, or B picture.

14. A disc apparatus according to Claim 13, further comprising:

searching means for determining the type of a specified playback-starting-frame based on the identification information indicating the type of encoding of the frame, and, when the specified playback-starting-frame is not I picture, searching for the temporally preceding nearest I

picture,

wherein the output means starts decoding from the searched I picture and outputs the video data from the specified frame.

15. A disc apparatus according to Claim 11, wherein an address indicating the position on the disc of the frame is described in the table.

16. A disc apparatus according to Claim 11,
wherein the identification information of each frame is described in the table in accordance with a display order, and

the searching means computes the position on the table of the specified frame based on the size of an entry of the table allocated to the frame and a specified-frame number.

17. A disc apparatus according to Claim 16,
wherein an offset value indicating a position from the top of the table is described in the table, and

the searching means computes the position on the table of the specified frame by using the offset value.

18. A disc playback method for playing back encoded video data recorded on a disc, comprising:

a playback step of playing back the video data and a table from the disc, the table including pieces of identification information of each frame of the video data: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame;

a frame generating step of generating a frame to be displayed based on the identification information in the played back table; and

an output step of decoding video data of the generated frame and outputting the video data.

19. A recording medium containing a computer-readable program for playing back encoded video data recorded on a disc, the program comprising:

a playback step of playing back the video data and a table from the disc, the table including pieces of identification information of each frame of the video data: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame;

a frame generating step of generating a frame to be displayed based on the identification information in the played back table; and

an output step of decoding video data of the generated frame and outputting the video data.

20. A program for playing back encoded video data recorded on a disc, the program allowing a computer to execute:

a playback step of playing back the video data and a table from the disc, the table including pieces of identification information of each frame of the video data: identification information indicating whether the first field of the frame is a top field, identification information indicating whether the frame includes a repeat field, and identification information indicating whether the frame is a dummy frame;

a frame generating step of generating a frame to be displayed based on the identification information in the played back table; and

an output step of decoding video data of the generated frame and outputting the video data.